ISSN (print) 0093-4666 © 2010. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

DOI: 10.5248/113.493

Volume 113, pp. 493–501 *July–September 2010*

Book reviews and notices

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Introduction

A variety of topics forms the subject of the books reviewed in this instalment from updated versions of books on ascomycetes, Moroccan gilled mushrooms, and European marasmioid and collybioid species, to a Japanese treatment of several genera in the *Agaricales*, a fungal inventory of the Black Forest's swamps, mires, and bogs, an introduction to Alaskan cryptogams, and an overview of fungi in all their aspects. A list of newly published books to be included in upcoming Book reviews and notices is given at the end.

Ascomycetes

Schimmelpilze und deren Bestimmung. 3. neu bearbeite Aufl. By L.E. Petrini & O. Petrini. 2010. J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung, Johannesstraße 3A, 70176 Stuttgart, Germany. <mail@schweizerbart.de>. Pp. x + 170, figs 33. ISBN 978-3-443-50035-1. Price € 39.80.

This short textbook first appeared in the series Bibliotheca Mycologica in 2002 (see Mycotaxon 86: 480–481, 2003) and was reissued in that series in 2008 with only very minor changes (see Mycotaxon 110: 511–512, 2009). The first obvious difference in this third edition is that it is not released as a part of the Bibliotheca Mycologica series — it has attractive coloured front and back covers with photographs rather than the standard bright green of a Bibliotheca Mycologica, something that will immediately make it more appealing to students. The book has also swelled by 26 pages, has five more figures, and I was personally gratified to see that the authors had acted

[1] Books for consideration for coverage in this column should be mailed to the Book Review Editor at the address above. All unsigned entries are by the Book Review Editor.

on particular points raised in my review of the second edition. This was not just a matter of correcting author attributions, and inserting cited references missing from the "Literatur" section but entailed the adoption of more recent molecular classifications and references, including the demise of the category "deuteromycet" — although "Coelomycetes" and "Hyphomycetes" persist for pragmatic reasons as headings in the keys. The authors have in large measure vindicated my comment "that they could have produced a book that was more authoritative and reflected our current knowledge of mould fungi". I was especially pleased to see that much of the increased length was due to new entries for additional genera, along with the re-arrangement and expansion of some of the photograph plates so as to include details of additional fungi. Unfortunately, the reproduction quality of some photographs taken from the previous edition is far from optimal (e.g., Abb. VIII.4). In addition, the short section on chemotaxonomic and molecular approaches to classification has been extended slightly; perhaps the section could be even longer in a fourth edition to explain in some detail the different molecular methods that can be employed in identification and the pitfalls of relying solely on sequence-comparisons. This textbook will now be even of more value to German-speaking students than the earlier editions. Indeed, those who bought the second edition should promptly discard it and buy the third!

My final comment is that I would like also to see this available in an English translation, especially as there is currently no really equivalent work in print. In particular, the plates showing different types of conidiogenesis in detail merit a much wider audience than they will receive hidden in a German text-book. I will be interested to see if this suggestion is taken up, and, if it is, I will be really pleased with the additional evidence that comments made in book reviews can have tangible results; the genre would then have been unequivocally vindicated.

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Guidebook

Common interior Alaska cryptogams. Fungi, lichenicolous fungi, lichenized fungi, slime molds, mosses, and liverworts. By G.A. Laursen & R.D. Seppelt. 2009. University of Alaska Press, PO Box 756240, Fairbanks, AK 99775, U.S.A. <fypress@uaf.edu> Pp. 256, plates 338, figs 113. ISBN 9781602230583. Price $26.95.

The vast and highly varied landscapes of interior Alaska provide a home for numerous fungi and mosses and liverworts, to which a first introduction is given in this field guide.

An introduction to the area, well known because of Denali National Park, to the various groups of organisms treated in this book, and to mushroom hunting in these wild areas precedes the main part of the book in which mushrooms distributed over various groups such as gilled mushrooms, gasteromycetes and assorted ascomycetes, lichens and lichenicolous fungi, slime molds, and mosses and liverworts are described. A glossary, list of references, and an appendix in which mycological reagents are treated finish off the book.

Each species is represented with a small photo and, in the case of the mosses, also with line drawings. The fungal photos are not always sharp and in some cases overexposed, which makes identification hard. Keys to the species are not provided, and only a small selection of species made it into the book (e.g., 80 gilled fungi). This is the first guidebook I have seen in which lichenicolous fungi have been given a place, which is really a very nice asset. Some of the names are a little out of date (e.g. *Microcollybia* for what is now *Collybia* and *Collybia* for *Gymnopus*; *Rozites caperatus* for *Cortinarius caperatus*). There is no indication whether the descriptions and the photos are based on the same specimens or whether the specimens that got their photos in the book were conserved in a herbarium.

The copy I read has several misprinted pages, and I hope that this is not a widespread problem.

All in all, it is a nice first introduction to mushrooms, fungi, and mosses of the fascinating northwest.

Agaricales and other gilled mushrooms

Compléments à la Flore des champignons supérieurs du Maroc de G. Malençon et R. Bertault. By J.-C. Maire, P.-A. Moreau, G. Robich (editors). 2009. Confédération européenne de mycologie méditerranéenne, Nice. Pp. 775, plates 58, figs 50. No ISBN number. Price ca. € 116.00.

The out-of-print work by Malençon & Bertault (1970, 1975) on Moroccan mushrooms is a classic example of well-executed, thorough flora work based on meticulous observations, fieldwork over a long period of time, and a sound insight in fungal taxonomy.

With a huge increase in interest in the mycoflora of the southern European Mediterranean countries, an update was deemed necessary. The CEMM (Confédération européenne de mycologie méditerranéenne) initiated the project of which this book is the result. It is not just a review of the original work with updated names — no, original material, collections, and water colours (many unpublished) that were kept at MPU were for the first time sent out to the contributors.

A total of 32 mycologists (amateur and professionals) from eight countries contributed, and the level of depth and manner of treatment was more or less left to the discretion of each contributor. There are pieces in French, Italian, Spanish, and English. The coordinator, Pierre-Arthur Moreau, regretted that it was not possible to include *Russula* and *Psathyrella* in the present work. During the research ten new taxa were discovered or names proposed by Malençon validated. Also a number of new combinations was necessary. For each species, the name originally used by Malençon & Bertault, the currently accepted or adopted name, lists of material examined, and comments are given. Original drawings and watercolours (both in colour and in black-and-white) from the notes made by Malençon, in some cases by the authors, illustrate the species.

For some groups a detailed account of all collections is given (e.g., for *Lactarius* sect. *Deliciosi* in the revision by Jorinde Nuytinck) while treatment is much less detailed for others, but overall the extensive discussions and notes are interesting and insightful. The genus *Hygrocybe* is included in two versions due to a small mistake by the coordinating editors.

Interesting is the find of a putative species of the genus *Cleistocybe*, a genus that was recently described (Ammirati et al. 2007) for veiled *Clitocybe*-like species. In general the names are up to date, although in some cases the authors adhere to some older generic concepts (e.g. *Stropholoma* instead of *Leratiomyces*; *Sericeomyces* instead of *Leucoagaricus*).

This is an extremely valuable work, contributing greatly to our knowledge of north African and Mediterranean taxa in general, and also a great example of a group effort to which many contributed.

Ammirati JF, Parker AD, Matheny PB. 2007. *Cleistocybe*, a new genus of *Agaricales*. Mycoscience 48: 282–289.

Malençon G, Bertault R. 1970. Flore des champignons supérieurs du Maroc. I. Travaux de l'Institut scientifique chérifien et de la Faculté des Sciences de Rabat, Série botanique et biologie végétale 32: 604 pp., 133 figs, 33 pl.

Malençon G, Bertault R. 1975. Flore des champignons supérieurs du Maroc. II. Travaux de l'Institut scientifique chérifien et de la Faculté des Sciences de Rabat, Série botanique et biologie végétale 33: 540 pp., 105 figs, 22 pl.

Taxonomic studies on *Agaricales* of Hokkaido, Northern Japan, with special reference to *Melanoleuca, Oudemansiella, Xerula, Volvariella* and *Pluteus*. By S. Takehashi, T. Hoshino & T. Kasuya. 2010. Non profit organization The forum of Fungi in northern Japan, Kanayama 1-3 10-3, Teine-ku, Sapporo, Hokkaido, 006-0041, Japan. <BXG05024@nifty.com>. Available from SANO Books, Sakae-machi 6-19, Aioi-city, Hyogo 678-0008, Japan, <e_sano@d2.dion.ne.jp>. Pp. 145 + xiii, numerous plates, numerous figs. ISBN 978-4-9905010-0-6. Price ¥ 5.600.

Keys and descriptions with photos and line drawings for four genera of *Agaricales* from Hokkaido form the mainstay of this book assembled by the

"Forum of Fungi" in northern Japan, a group of mushroom enthusiasts who have been researching and documenting the fungi of this northernmost of the four main islands of Japan. Since the 1938 publication by Imai, there has not been a comprehensive update of this seminal work, until this initiative, which treats *Melanoleuca*, *Oudemansiella*, *Xerula*, *Volvariella,* and *Pluteus.* The taxonomic part, which is in Japanese and English, is interspersed with Japanese only sections, with descriptions of some of the collecting sites, fungal names used by the Ainu, fruiting phenology, Hokkaido in fungal epithets, fungi under snow cover, and a separate page on the morphology and ecology of *Melanoleuca verrucipes.*

A total of four *Melanoleuca*, three *Oudemansiella*, 13 *Xerula*, four *Volvariella*, and 28 *Pluteus* taxa are treated in detail. It is impressive that this volume tackles two difficult genera, *Pluteus* and *Melanoleuca.* Species that could not be identified are presented as "X" sp., and comments and comparisons with the literature etc. are given for each taxon. The descriptions are complete and the illustrations are adequate (including SEM photos of the spores for *Melanoleuca*) and clearly labeled as to which collections they reference.

It is a bit of a disappointment to discover that the name 'idahoensis' does not refer to a place in Japan, but to the western American state of Idaho!

This work will serve as a modern treatment for these genera for Japan, and as an example for other areas of the world.

Imai S. 1938. Studies on the *Agaricaceae* of Hokkaido. I. Journal of the faculty of Agriculture Hokkaido Imperial University 43: 1–378.

A monograph of marasmioid and collybioid fungi in Europe. By V. Antonín & M.E. Noordeloos, 2010. IHW-Verlag & Verlagsbuchhandlung, Postfach 1119, 85378 Eching, Germany <dr.schmid@ihwverlag.de>. Pp 480, figs 131, Plates 130. ISBN 978-3-930167-72-2. €139.00.

This is the updated version of the two earlier volumes on the marasmioid and gymnopoid fungi of Europe (Antonín & Noordeloos 1993, 1997); more colour photos, especially for the marasmioid species, recently described species, and new notes have been added. With almost 500 pages and 130 colour plates, the 'monograph' is a very impressive book indeed. To free space, the lists of examined specimens and excluded species are provided separately on a CD that comes with the book. An introduction to the group, overviews of past classifications, and phylogenetic placements inferred from phylogenetic DNA analyses are given in the introduction, together with an explanation of names selected (see below). Keys to the genera, groups, and species make it relatively easy to find a name for your specimens. Extensive descriptions of macroscopical and microscopical characters for each taxon, notes on ecology, occurrence, and

habitat, and comments on similar taxa and other interesting and necessary information are included.

By publishing now, the authors had to make many decisions on the classification, as the phylogeny of this group of species is in no way completely settled. For instance, just this spring, Hughes et al (2010) proposed the new genus *Connopus* for *Gymnopus acervatus*. The group of species treated in this book, once smugly accommodated in the white spored catch-all family *Tricholomataceae*, has been shown to fall into four families (*Tricholomataceae* in a strict sense, *Marasmiaceae*, *Omphalotaceae*, and *Physalacriaceae*). Various authors (e.g. Mata et al 2004, 2006; Wilson & Desjardin 2005) have studied different taxa in this group using different sets of molecular markers as a base for their phylogenetic hypotheses, resulting in a jig saw puzzle for which we still only have a small number of pieces, some of them fitting together, others representing different parts of the picture. It also does not help that the majority of the species of *Marasmius* and *Marasmiellus* is tropical. Antonín & Noordeloos, who did not perform molecular-phylogenetic analyses on the European taxa themselves, relied on work by others. They decided to treat *Setulipes* (*Marasmius androsaceus* et al) within *Gymnopus* {based primarily on work by Mata et al. (2006)} — still quite controversial, as up to now only a very few *Setulipes* species have been analyzed. *Micromphale* species are also included in *Gymnopus*, whereas in 1997 Antonín and Noordeloos placed them in *Marasmiellus*. *Marasmius*, *Gymnopus*, and *Marasmiellus* are recognized as being not monophyletic, with *Marasmius* even spread over two families. But as the dust has not yet settled on the phylogenies of these taxa, this is indeed a good compromise. *Gloiocephala*, the small gelatinized and almost lamella free species growing on grasses and the like, is again a separate genus, not at all close to the core group of *Marasmius*. *Mycetinis* accommodates the garlic smelling species formerly placed in *Marasmius*; but now *M. epidryas* is also in *Mycetinis*. It must be frustrating for users to know that more name changes will be imminent.

At the species level, the group of species around *Gymnopus dryophilus* definitely needs more work: Mata et al (2006) showed that *G. ocior* is restricted to North America, yet the name is still maintained here for a European species.

With a work of this size there are of course many details to attend to, and there the book does fall short. Species numbers in keys are occasionally off, the two parts of a lemma of a key may cite the same habitat, the list of substrate specialists taken from the 1993 book omits most of *Gymnopus*, a figure legend may still have the old genus name, and so on.

Nevertheless, these are minor comments on a very useful, well illustrated, very informative book.

Antonín V, Noordeloos ME. 1993. A monograph of *Marasmius, Collybia* and related general in Europe. Part 1: *Marasmius, Setulipes*, and *Marasmiellus*. Libri Botanici 8.

Antonín V, Noordeloos ME. 1997. A monograph of *Marasmius, Collybia* and related general in Europe. Part 1: *Collybia, Gymnopus, Rhodocollybia, Crinipellis, Chaetocalathus*, and additions to *Marasmiellus*. Libri Botanici 17.

Hughes KW, Mather DA, Petersen RH. 2010. A new genus to accommodate *Gymnopus acervatus (Agaricales)*. Mycologia doi:10.3852/09-318

Mata JL, Hughes KW, Petersen RH. 2004. The phylogenetic position of *Marasmiellus juniperinus*. Mycoscience 45: 214–221.

Mata JL, Hughes KW, Petersen RH. 2006. An investigation of /omphalotaceae (*Fungi:* Euagarics) with emphasis of the genus *Gymnopus*. Sydowia 58: 191–289.

Wilson AW, Desjardin DE. 2005. Phylogenetic relationships in the gymnopoid and marasmioid fungi (*Basidiomycetes,* euagarics clade). Mycologia 97: 667–679.

Fungal inventories

Die Funga der Moore des Hochschwarzwaldes. Ergebnisse einer Langzeitstudie. By D. Laber. 2010. Beiheft zur Zeitschrift für Mykologie Band 11. Deutsche Gesellschaft für Mykologie, Postfach 700447, 81304 München, Germany. <schatzmeister@dgfm-ev.de>. Pp 208, figs 43, plates 84. Price € 25.

Over the course of 34 years, 578 forays into different types of moors, swamps, bogs, brooksides, and other watery habitats in the higher ranges of the Black Forest were undertaken by the author and her husband. The results of all this work are reflected in this excellent publication. A thorough introduction, with detailed information on the visited areas, their vegetation, and their fungi is followed by a checklist of all 671 fungal species identified and detailed descriptions of selected interesting species. The author focused on the more conspicuous basidiomycetes and ascomycetes, leaving to one side crust fungi and the ascomycetes that form small fruitbodies. The area and its fungi stand out because of the granite and gneiss bedrock, which complicates comparison with the mycoflora of other similar European habitats situated on limestone (Favre 1948 for the Jura, Moreau 2002 for the French northern Alps, Einhellinger 1976 & 1977 for Bavarian swamps and bogs). One finding in the present work is that species regarded as northern and occurring in Scandinavia are also at home in this montane area further south. I am very impressed by the fact that the names are very up-to-date; it is clear that a huge effort has been put into using the proper nomenclature, an extraordinarily difficult task that demands a large library.

The checklist part gives for each taxon the exact habitats, the number of finds per location, the fruiting period, the highest altitude found, and a picture reference. Full descriptions are complemented by line drawings and discussions of the finds.

This work is important in a number of ways. It gives the mycoflora of one area at one point in time, which is great in respect to possible changes that will take place; currently the area still gets a high amount of precipitation, but this might change in the future. Such a comprehensive and illustrated overview of the fungi in one habitat type in one region can help identify species in other similar habitats. An extremely good example of what dedicated research over a long period can achieve, the 'Funga' also demonstrates that one need not be a professional mycologist to contribute. Similar research, but not as long-running, was done by a team of mycologists on Vancouver Island (Canada) (e.g. Roberts et al. 2004), but the longevity and thoroughness of the German study make it stand out. In short, the Laber work is highly recommended, not only for those interested in central European mycoflora but also for everybody interested in doing fungal surveys themselves.

Einhellinger A. 1976. Die Pilzen in primären und sekundären Pflanzengesellschaften oberbayerischer Moore, Tel 1. Ber. Bayer. Bot. Ges. 47: 75–149.

Einhellinger A. 1977. Die Pilzen in primären und sekundären Pflanzengesellschaften oberbayerischer Moore, Tel 2. Ber. Bayer. Bot. Ges. 48: 61–146.

Favre J. 1948. Les associations fongiques des haut marais jurassiens. Beiträge zur Kryptogamenflora der Schweiz 10: 1–228.

Moreau P-A 2002. Analyse écologique et patromoniale des champignons supérieurs dans les tourbières des Alpes du Nord. Thesis Université de Savoie. 336 pp.

Roberts C, Ceska O, Kroeger P, Kendrick B, 2004. Macrofungi from six habitats over five years in Clayoquot Sound, Vancouver Island. Canadian Journal of Botany 82: 1518–1538.

Fungi in General

The kingdom *Fungi*. The biology of mushrooms, molds and lichens. By S.L. Stephenson. 2010. Timber Press, 133 SW 2nd Avenue #450, Portland, OR 97204, U.S.A. <info@timberpress.com>. Pp. 328, plates 124. ISBN 978-0-88192-891-4. Price $34.95, £ 20.00.

Not a text book, not a collection of fungal stories, but an introduction to the world of fungi for lay persons and amateur mycologists – that is what this book boils down to.

After an introduction to the subject, various groups of fungi, not necessarily taxonomic units, are treated. Aquatic fungi first, followed by terrestrial fungi divided into subgroups (ascomycetes and zygomycetes, truffles and their kin, gilled fungi and other basidiomycetes, lichens and slime molds). Chapters on the roles of fungi in the environment, interactions between fungi and humans and other animals, and fossil fungi, plus a glossary and a list of references make this book complete. Two sets of colour photos, a total of 124 plates, illustrate it quite nicely. There are neither diagrams of life cycles and such nor phylogenetic trees to clarify the concepts given in the text.

From the list of chapters it should be clear that also some non-fungi such as the water molds and slime molds are treated, as they look and behave like fungi and have traditionally been studied by mycologists. The author indicates that many of the old categories and classifications do not hold up in the age in which phylogenetic methods to compare DNA sequences have revolutionized fungal classifications, but he still uses old terms such as gasteromycetes and aphyllophorales. That is a missed chance, in my opinion, for such a book is an excellent place to introduce amateur mycologists to new insights.

The kingdom *Fungi* contains enough interesting tidbits and fascinating mycological oddities to entice the reader, and it might pave the road to other more comprehensive books.

Book Announcements

Les myxomycètes. By M. Poulain, M. Meyer & J. Bozonnet, 2010. FMBDS, 8, Avenue de la Plaine, 74000 Annecy, France, <philippecattin74@orange.fr>. 2 vols, Plates 546. € 80 (before Oct 2010) € 120.

FoodMold: an interactive CD guide to foodborne fungi. By J.I. Pitt, E. Rico-Munoz & E.S. Johnson, 2009. BCN Research Laboratories, 2491 Stock Creek Blvd, Rockford, TN 37853, U.S.A. foodmold@bcnlabs.com. $ 340.

Fascinating microfungi (hyphomycetes) of Western Ghats, India. By D.J. Bhat, 2010. Broadway Book Centre. Pp xii, 222, figs 127. $80.00 (includes shipping).

Systematics of *Calonectria*: a genus of root, shoot and foliar pathogens. By L. Lorenzo, P.W. Crous, B.D. Wingfield & M.J. Wingfield, 2010. Studies in Mycology 66. CBS Fungal Biodiversity Centre, Uppsalalaan 8, 3584 CT, Utrecht, the Netherlands, http://shop.fungalbiodiversitycentre.com Pp 71 € 40.